

REMARKS

Claims 1-22 are pending. Of these, claims 1 and 11 have been amended. Applicants submit that the amendments presented herein raise no new issues requiring further searching or consideration by the Examiner. Entry is therefore respectfully requested.

Claims 1, 4, 11, 13, and 19-22 were rejected under 35 USC § 103(a) for being obvious in view of a Kasahara-Kang-Shigeta '625 combination. Applicants request the Examiner to withdraw this rejection for the following reasons.

Claim 1 recites that the frame interval includes “a plurality of selective erasing sub-fields and a plurality of selective writing sub-fields.” In addition to these features, claim 1 recite that the controlling step includes “setting a number of selective erasing sub-fields to be larger than a number of selective writing sub-fields in a first operation mode, and setting a number of selective writing sub-fields to be larger than a number of selective erasing sub-fields in a second operation mode.” These features are not taught or suggested by the cited references.

The Kasahara publication discloses changing a sub-field arrangement based on the amount of contour noise in a picture, e.g., whether the picture is a TV picture or PC picture. However, Kasahara does not disclose that a frame interval for generating its picture includes both selective erasing sub-fields and selective writing sub-fields, i.e., “a plurality of selective erasing sub-fields and a plurality of selective writing sub-fields.” Rather, Kasahara discloses that all the sub-fields in its frame are selective writing sub-fields. This is evident from Figure 7 which

shows that the pulse applied during the address period turn on, and thus generates a selective writing discharge, in a corresponding display cell.

Also, the Kasahara publication does not disclose “setting a number of selective erasing sub-fields to be larger than a number of selective writing sub-fields in a first operation mode, and setting a number of selective writing sub-fields to be larger than a number of selective erasing sub-fields in a second operation mode.” Rather, as previously indicated, Kasahara merely changes the number of selective writing sub-fields in each of its frames to reduce contour noise. See Figure 10A of Kasahara having twelve sub-fields in TV mode, compared with Figure 10B having 10 sub-fields in PC mode. To make up for these omissions, the Kang and Shigeta patents were cited.

The Kang patent discloses a frame that includes more selective erasing sub-fields than selective writing sub-fields.

The Shigeta ‘625 patent discloses a frame having either all selective writing sub-fields or all selective erasing sub-fields. See column 22, lines 20-41, with reference to Figure 31. The Examiner relied on this portion of Shigeta to reject claim 1. But, here, Shigeta discloses that Figure 31 only includes selective writing sub-fields. Column 22, lines 24-26, makes this clear when it discloses that “FIG. 31 shows a light-emission drive format used with the selective write addressing method is employed.” In contrast, Figure 30 shows only selective erasing sub-fields. Shigeta does not teach or suggest

Also, none of the references of record including Shigeta teach or suggest “setting a number of selective writing sub-fields to be larger than a number of selective erasing sub-fields” in a second mode of operation which is different from the first mode of operation, where the number of selective erasing sub-fields is greater than the number of selective writing sub-fields. Shigeta does not teach or suggest these features since as previously indicated its frame only include all selective writing sub-fields (Fig. 31) or all selective erasing sub-fields (Fig. 30).

Finally, claim 1 recites that “a total number of sub-fields in the frame interval the first mode of operation equals a total number of sub-fields in the frame interval of the second mode of operation.” (Compare, for example, Figures 4 and 5 of the application drawings where the total number of selective erasing and selective writing sub-fields is the same (e.g., 12) in the AV and PC modes, even through there are different relative numbers of selective erasing and selective writing sub-fields.) These features are not taught or suggested by the cited references. In fact, Kasahara teaches away from these features by changing the total number of sub-fields in TV and PC modes.

Based on these differences, it is respectfully submitted that claim 1 is allowable over a Kasahara-Kang-Shigeta combination. Furtherance of claim 1 and its dependent claims to allowance is respectfully requested.

Claim 11 recites an apparatus having features analogous to those which patentably distinguish claim 1 from a Kasahara-Kang-Shigeta combination. Furtherance of claim 11 and its dependent claims to allowance is therefore respectfully requested.

Claim 19 was also rejected based on a Kasahara-Kang-Shigeta combination. In rejecting this claim, the Examiner relied on Figures 46A-47B of Shigeta. Here, Shigeta shows sub-fields having different gray scale numbers. But, all of these sub-fields are either selective erasing sub-fields or selective writing sub-fields, not **both** as required by base claim 1.

Moreover, Shigeta does not teach or suggest that for a frame interval having both selective erasing and writing sub-fields, “setting the number of selective erasing sub-fields to be larger than the number of selective writing sub-fields corresponds to a first number of gray levels that are capable of being generated, and wherein setting the number of selective writing sub-fields to be larger than the number of selective erasing sub-fields corresponds to a second number of gray levels that are capable of being generated, the second number of gray levels being greater than the first number of gray levels.”

Applicants therefore submit that claim 19 is allowable, not only by virtue of its dependency from claim 1 but also based on the features separately recited therein.

Claim 21 recites that “a last one of the selective erasing subfields does not have a reset period and other ones of the selective writing sub-fields have a reset period.” These features are not taught or suggested by the cited references, whether taken alone or in combination. For example, in rejecting claim 21, the Examiner relied on claims 35 and 36 of the Kang patent.

However, claim 35 of Kang merely indicates that that a last selective writing sub-field includes a writing address period and a sustain period. The word “includes” here is an open-ended phrase. Thus, indicating that the last selective writing sub-field has address and sustain

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periods does not exclude the existence of a reset period in the last selective writing sub-field. In fact, claim 36 of Kang expressly indicates that the last selective writing sub-field has a reset period, which is a direct teaching away from the features of claim 21.

Moreover, claim 21 requires all other selective writing sub-fields to have a reset period. Kang does not teach or suggest these features.

Still further, Kang teaches away from these features of claim 21 when it shows in all of its drawings that only the first sub-field includes a reset period and all other sub-fields do not have a reset period. See Figures 5, 8, 9, and 12 of Kang where the reset period is shown by the shaded box and this box only appears in the first sub-field.

In view of the foregoing differences, Applicants submit that claim 21 is allowable, not only by virtue of its dependency from claim 1 but also based on the features recited therein.

Claim 22 recites that “a last one of the selective writing sub-fields does not have an erasure period and other ones of the selective writing sub-fields has an erasure period.” The Examiner also relied on claims 35 and 36 of Kang for these features. However, in these claims Kang only discloses that the last selective writing sub-field has address and sustain periods. Kang does not disclose in these claims or any other portion of its patent that the last selective writing sub-field does not have an erase period but that all the other selective writing sub-fields do. Applicants therefore submit that claim 22 is allowable, not only by virtue of its dependency from claim 1 but also based on the features separately recited therein.

Claims 2, 3, and 12 were rejected under 35 USC § 103(a) for being obvious in view of a Kasahara-Kang-Shigeta-Boger combination. Applicants traverse this rejection on grounds that the Boger patent does not teach or suggest the features of base claims 1 and 11 missing from the Kasahara, Kang, and Shigeta patents.

Claim 5 was rejected under 35 USC § 103(a) for being obvious in view of a Kasahara-Kang-Shigeta-Shigeta combination. Applicants traverse this rejection on grounds that the second Shigeta patent does not teach or suggest the features of base claim 1 missing from the Kasahara, Kang, and other Shigeta patents.

Claims 6-10 and 14-18 were rejected under 35 USC § 103(a) for being obvious in view of a Kasahara-Shigeta-Otobe combination. Applicants traverse the rejection of claims 6-8 and 14-16 on grounds that the Otobe patent does not teach or suggest the features of base claims 1 and 11 missing from the Kasahara, Kang, and Shigeta patents.

Claim 9 recites “if said operation mode is selected to be a PC mode in which a motion extent of said data is small relative to an AV mode, then the number of sustaining pulses within the frame interval is reduced to be smaller than a number of sustaining pulses set in correspondence with the AV mode in which a motion extent of said data is large relative to the PC mode.” The Examiner relied on the Otobe patent to supply these features.

The Otobe patent discloses different arrangements of sub-fields and gradation levels and also different luminance levels. (See columns 40 and 41 with reference to Figures 70-73). But, Otobe does not teach or suggest that “if said operation mode is selected to be a PC mode in

which a motion extent of said data is small relative to an AV mode, then the number of sustaining pulses within the frame interval is reduced to be smaller than a number of sustaining pulses set in correspondence with the AV mode in which a motion extent of said data is large relative to the PC mode.”

Otobe also does not teach or suggest at columns 40 or 41, Figures 70-73, or at any other portion of its disclosure that “the reduction in the number of sustaining pulses in PC mode is set to reduce average brightness to within a predetermined range relative to average brightness achieved during AV mode.” Otobe says nothing about making these types of reductions in PC mode relative to AV mode or vice versa, in order reduce average brightness or for any other reason.

The Shigeta ‘792 patent also fails to teach or suggest these features, i.e., Shigeta ‘792 discloses selected cells and non-selected cells that correspond to erase and non-erase address periods. However, Shigeta ‘792 says nothing about “if said operation mode is selected to be a **PC mode**, then the number of sustaining pulses within the frame interval is reduced to be smaller than a number of sustaining pulses set in correspondence with the AV mode in which a motion extent of said data is large relative to the PC mode.” Or, that “the reduction in the number of sustaining pulses in PC mode is set to reduce average brightness to within a predetermined range relative to average brightness achieved during AV mode.”

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Based on these differences, Applicants submit that claim 9 is allowable over the cited combination of references. Claim 17 recites features analogous or similar to those in claim 9. Furtherance of claims 9, 17, and their dependent claims to allowance is respectfully requested.

In view of the foregoing amendments and remarks, it is respectfully submitted that this application is in condition for allowance. Favorable consideration and timely allowance of the application is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
KED & ASSOCIATES, LLP



Daniel Y. J. Kim
Registration No. 36,186

Samuel W. Ntiros
Registration No. 39,318

P.O. Box 221200
Chantilly, Virginia 20153-1200
703 766-3777

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Please direct all correspondence to Customer Number 34610